

PCT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference FGPE03-001	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/KR03/01668	International filing date (<i>day/month/year</i>) 19 AUGUST 2003 (19.08.2003)	(Earliest) Priority Date (<i>day/month/year</i>) 19 AUGUST 2002 (19.08.2002)
Applicant LG INNOTEK CO.,LTD et al		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawing** to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ None of the figures

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to part of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Search Authority found multiple inventions in this international application, as follows:

- I. Claims 1-5 and 11-20 directed to a intermediate layer between a buffer layer and an n-clad layer of GaN-based LED.
- II. Claims 6-10 directed to an n-clad layer of GaN-based LED

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be established without effort justifying an additional fee, this Authority did not invite payment of any addition fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 H01L 33/00**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L H01S

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean patents and applications for inventions, since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 9-153643 A2 (TOYODA GOSEI KK, TOYODA CHUO KENKYUSHO KK) 10 JUNE 1997 see the paragraph [0010]-[0012], Figure 1	6-9
A	see the whole documents	1-5, 10-20
A	JP 9-129925 A2 (TOYODA GOSEI KK, AKASAKI ISAMU, AMANO HIROSHI) 16 MAY 1997 see the paragraph [0010]-[0011], Figure 1	1 -20
A	JP 2001-7397 A2 (NICHIA CHEM. IND. LTD) 12 JANUARY 2001 see the whole documents	1 -20
A	JP 10-173220 A2 (ROHM CO. LTD) 26 JULY 1998 see the whole documents	1 -20
A	JP 7-302929 A2 (SUMITOMO CHEM. CO. LTD) 14 NOVEMBER 1995 see the whole documents	1 -20
A	JP 7- 254733 A2 (NICHIA CHEM. IND. LTD) 3 OCTOBER 1995 see the Figure 3	1 -20

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

24 NOVEMBER 2003 (24.11.2003)

Date of mailing of the international search report

24 NOVEMBER 2003 (24.11.2003)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KIM, Dong Yup

Telephone No. 82-42-481-5749



INTERNATIONAL SEARCH REPORT
Information on patent family members

National application No.

PCT/KR03/01668

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 9-153643 A2	10.06.1997	NONE	
JP 9-129925 A2	16.05.1997	NONE	
JP 2001-7397 A2	12.01.2001	JP 3412563 B2	03.06.2003
JP 10-173220 A2	26.06.1998	NONE	
JP 7-302929 A2	14.11.1995	NONE	
JP 7- 254733 A2	03.10.1995	JP 3180871 B2	25.06.2001